

CACTUS AND SUCCULENT JOURNAL

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Of America

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Yucca australis flowering in Huntington
Botanic Garden



CACTUS AND SUCCULENT JOURNAL

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SECRETARY: Harold Weston, Mail Address—6162 North Figueroa St., Los Angeles

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PROPOSED CHANGES IN THE BY-LAWS
TO ACCOMMODATE NEW EDITORIAL
POLICY

Last part of present Art. 1, Sec. 5 (quoted in explanation only; it is not to be changed).

"The Librarian shall be appointed each year by the Executive Committee at its first Meeting of the year. The Librarian may be removed from office by the Executive Committee at any time."

(Present Sec. 5A). "The Editor shall be appointed and may be removed by the Executive Committee in the same manner as the Librarian."

Change to read: "Sec. 5A—The Editor shall be appointed each year by the Executive Committee at its first meeting of the year and may be removed from office by the Executive Committee at any time except in case a written agreement for the publication of the Journal shall have been entered into with the Editor by the Society, in which case the appointment and removal of the Editor shall be governed by the terms of such written agreement."

Present Article VII (in full)

"Section 1. The Society shall issue a monthly Journal. The name of this publication shall be Cactus and Succulent Journal of the Cactus and Succulent Society of America.

This Journal shall be edited by or under the supervision of the Executive Committee or a special editorial committee approved by the Executive Committee who shall have authority to accept or reject any advertising or reading matter, or any part thereof, which they consider unsuit-

able.

The subscription price to non-members shall be Three Dollars per year."

Change to read; (Leave first paragraph unchanged)

(Second paragraph)—"This Journal shall be edited by or under the supervision of the Executive Committee or a special editorial committee approved by the Executive Committee who shall have authority to accept or reject any advertising or reading matter, or any part thereof, which they consider unsuitable, or the Society may enter into a written agreement with a duly appointed Editor for the publication and business management of the Journal by a majority vote at a regular meeting provided such agreement shall have been approved by the Executive Committee."

(Third paragraph)—"The subscription price to non-members shall not exceed Three Dollars per year."

TO COMPLETE MONOGRAPH ON
ECHEVERIAS

After delivering a lecture on Echeverias, Eric Walther flew to Mexico City to conduct additional research for his book on Echeverias. The Society is proud of a member who is doing this original work on this group of plants. Mr. Walther (2667 McAllister St., San Francisco) will be glad to hear from all those interested in his work.



Yucca valida flowering in Huntington Botanic Garden

Two Yuccas Not Often Cultivated

By WILLIAM HERTRICH

Yucca australis

The accompanying illustration (shown on front cover) typifies the above mentioned *Yucca* as cultivated in the Huntington Botanic Garden at San Marino, California. This and various other specimens in this garden range in height from 15 to 25 feet. They were grown from small plants and some of them have been in cultivation for nearly twenty years.

This species was discovered by Dr. Gregg near Saltillo, Northeastern Mexico in 1846 and near Parras by Dr. Thurber in 1853. About 1860 Roezl and Galeotti sent seeds of this *Yucca* to Europe which were cultivated and grown successfully, especially in the Southern part of Europe as one of Roezl importations produced flowers in 1876 near Hyeres, France. The dealers name by which the plant was known in the trade in Europe at that time was "*filifera*." Dr. George Englemann described this *Yucca* as *baccata australis* in Trans. Acad. St. Louis, 1873, and was evidently not acquainted with its peculiar pendant inflorescence and so took it for a

variety of *baccata*.

Professor Charles Sprague Sargent in a paper published in Garden and Forest for 1888 writes as follows: "*Yucca filifera* is a conspicuous object in the arid plains which rise from the Rio Grande to the foot-hills of Sierra Madre. The great panicles of white flowers can be seen for miles in the arid atmosphere of that region and look like gleaming water-falls pouring out from the end of the branches." Professor Sargent was as enthusiastic about *Yucca australis* in its native habitat as was the writer who, when collecting cacti in Mexico in 1911, had the opportunity to admire hundreds of plants during their flowering period in their native habitat.

J. C. Baker in the Curtis Botanical Magazine Tab. No. 7197, illustrates *Yucca filifera* under date of October 1891, and has this interesting paragraph about one plant which was sent to Kew in October, 1888, by Mr. C. G. Pringle from Monterey through Professor Sargent. The plant received at Kew appeared quite dead and the trunk was consequently

placed in the Museum of Economic Botany. After remaining there for two years it put out rudimentary leaves and an inflorescence and on being transferred to the Temperate House this was fully developed in September, 1890. He also mentions the fact that the leaves were shorter than in the wild type and that the panicles were erect and less dense. These characteristics, however, correspond more with *Yucca valida* than with *Yucca australis*. To my knowledge *Yucca valida* has not been found near Monterey from where this plant was supposedly shipped to Kew. However, it is not only possible but quite certain that rudimentary leaves produced on a stem after having been out of the ground for two years would be considerably shorter than on the same species in its native habitat. Whether or not the inflorescence would be sufficiently influenced to change its habit from a pendant form to an upright one is not so clear, although being only a fraction of its natural size with correspondingly fewer flowers could possibly account for the marked difference.

Professor William Trelease recognized *Yucca australis* as a distinct species and published a full description of the plant in the Thirteenth Annual Report of the Missouri Botanical Garden for 1902.

The characteristic which marks *Yucca australis* apart from the other species of this genus is not only its tree-like proportions and heavy rough trunk with many upright branches, but more especially its pendant inflorescence and branches on the arched peduncle carrying many light creamish white flowers. In cultivation in rich soil this *Yucca* branches very often at the base after the main trunk attains a height of from 10 to 15 feet. In the collection at the Huntington Botanic Garden some of the plants begin to bloom at a height of from 12 to 15 feet while others grow up to 20 feet before they begin to produce their first flowers and then begin to branch.

The native habitat covers a considerable area in Mexico taking in part of the state of Coahuila, Nuevo Leon also in Tamaulipas and Queretaro. In some sections they form large forests.

Yucca valida Brandegee

Closely related to *Yucca australis*, but smaller in size, having different arrangement of branching and quite different arrangement of the inflorescence is *Yucca valida*. The accompanying photo shows the plant grown

in the Huntington Botanic Garden, which perhaps, is not a typical specimen. It is cultivated in rather rich soil with added moisture during the summer months which, plus the winter rains, encourages somewhat faster and softer growth thus tending to curve the branches downward from the body of the plant as soon as increased weight is added to the terminals either through an inflorescence or branching after flowering. Other smaller specimens also located at the Huntington Botanic Garden under less favorable conditions do not show this same habit. However, from an ornamental stand-point in localities where this *Yucca* can be grown in the open it is indeed a most interesting species and should find a place in all plant collections of this nature. Its main difference from *Yucca australis* is found in its inflorescence which, instead of being pendant extends rather stiffly in the same direction as the terminal of the trunk. Other differences are: considerably shorter leaves, perhaps somewhat stiffer as well; branching lower, very often from the base as the accompanying illustration indicates. It was first described by Professor T. S. Brandegee in the *Proceed. of the Calif. Acad.* for 1889; and fully described by Professor William Trelease in the Thirteenth Annual Report of the Missouri Botanical Garden. The habitat of *Yucca valida* is in central Lower California and on the high table land of Central Mexico in the States of Durango, Zacatecas and San Luis Potosi.

"THE STUDY OF CACTI"

By V. HIGGINS

Start your cactus library with this, the best book for beginners and advanced collectors. Cactus names explained. All genera listed. \$1.95 postpaid—Edgar Baxter, Bellflower, Calif.

Notice to New York and New Jersey members: Communicate with Carl Pietzsch regarding local meeting, at 169 Union Ave., Clifton, N. J.

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Edibility of Cactus

By HORTENSE A. WEIMER

Editor's Note: In the September Cactus Journal L. H. H. asked for information on the edibility of cactus and other succulents. The following article is a valued contribution on this subject.

Travelers of today whirl across the desert so rapidly that they see only the dry sand and stunted bizarre vegetation. Not understanding the desert they hurry on thinking that here there is nothing but intense heat, starvation and death. Little do they realize that the most insignificant shrub may furnish flour or that the spiniest cactus may supply them with water or candy.

The desert is a stage and the play, though it may not be seen, is a drama of endeavor, a passionate fight to survive. One of the chief actors in this drama of life in the intense heat, rainless days and cold nights, is the cactus—most characteristic and interesting of all the desert vegetation. When the rains come, the cacti take up the water and hoard the precious fluid for use in maturing their flowers and fruits. Almost all of these plants, from the tiny strawberry cactus (*Neomammillaria goodridgii*) to the giant sahuaro (*Carnegiea gigantea*), yield food or water, but it often requires a Spartan courage to reach the edible parts through the bristling bundles of thorns.

The ripe, yellow fruits of the barrel cactus (*Ferocactus acanthodes*) are cooked and eaten as food, while enough water to sustain life is found in the large spiny barrels. This slightly greenish water is palatable and wholesome and is a much better drink than the alkali water so commonly found on the desert. It is easily obtained by cutting off the top of the barrel and pounding the white juicy interior until the water collects in the cavity. The pulp of this species has no food value. Long ago the Indians used the plant as a sort of fireless cooker. Water, squeezed from the pulp, was placed in the hollowed out barrel and heated with hot stones. Cactus candy, which has become so popular in recent years, is made by cutting the crisp hearts of the barrel cactus into small cubes and candy-ing them.

The sahuaro, whose green candelabra-like branches rise high in the air, flourishes on plains and mountain slopes under conditions

so adverse that few other plants can survive. Its branches are armed with rows of spines and, in May and June, bear exquisite waxen white flowers. From time immemorial the fig-shaped sahuaro fruits have been a favorite food with Indians and whites alike. The Papago Indians begin their new year at the harvest time of this sentinel of the desert, with a festival lasting several days. Large quantities of the seedy fruits are eaten fresh, but, for the most part, they are made into preserves and thick heavy syrup which somewhat resembles sorghum. This syrup is made into an intoxicating wine that is used during the sahuaro festival. The pulp of the fruit is dried in the sun and packed into solid cakes to be stored for winter use. Even the seeds, which are produced in large quantities, are utilized, being ground and made into nutritious meal cakes.

Nearly all the flat lobed *Opuntias* are a source of food. One of the most common is the beaver tail (*Opuntia basilaris*). Panamint Indians dry the gray-green pads, buds, flowers and fruits in the sun. Treated in this way they keep indefinitely and, when needed, are cooked by boiling. The seeds are ground into meal and the fresh young buds are baked.

Then there is the prickly pear or tuna (*Opuntia occidentalis*) that is so common in southern California. After the tiny bristles are removed from the fruits, the ends are sliced off and the rind peeled back, releasing the sweet pulp. Indians dry large quantities of the fruits for winter and use the fresh fruit to make a fermented drink. They also roast the joints in hot coals and eat the sweet substance left after the outer skin and thorns are removed. The buds are sometimes mixed with other greens and stewed. The flat lobes are chopped into small pieces and used as a relish or pickle.

When the Franciscan Fathers came to California to establish their missions they brought with them two species of nopal (*Opuntia megacantha* and *O. ficus-indica*) to plant around the mission buildings as food producing hedges. These two species, old in Mexican legendary lore, are highly prized by both whites and Indians for their food value. The spineless young joints are either cut into strips and cooked as a vegetable, or used raw

in salads, while the large juicy fruits are eaten raw, made into jelly and rich preserves.

Even the cholla (*Opuntia fulgida*), one of the most disreputable of the cactus family, offers its mite in the way of food and drink. The fruit is eaten raw or made into jelly, and a drink is prepared from the juice.

Outstanding among desert plants is the mescal or century plant (*Agave deserti*). One would hardly suspect that any part of these dagger-like plants could be used as food, yet from ancient times the Agave has been considered one of the desert's delicacies; one that is food, drink and sweetmeat. In the spring the flower stalk, similar to an asparagus sprout, rises from the heart of the plant. When this shoot reaches a height of six or eight inches it is cut out and baked until it becomes a sticky mass of confection as sweet as sugar. This can be sun dried to a taffy consistency and kept for months to be eaten as desired. Indians also boil and eat the flowers.

The Yuccas (*Yucca whipplei* and *Y. mohavensis*) constitute another interesting group of plants that have had to meet living conditions in a region where moisture is at a premium. Raising their hostile yet stately stalks of creamy white blossoms over the desert and mountain sides, they are well named "Our Lord's Candles." Nature has provided for their protection by giving them armored leaves. Yuccas were considered one of the main stays of life by the early inhabitants. The tender young stems are baked like sweet potatoes, or sliced and cooked as greens; sometimes the stems are eaten raw. Flowers and fruits of the Yuccas also are excellent food. The ripe fruits are eaten raw, made into jelly or dried and ground into flour.

No more weird or grotesque desert growth can be found than the Joshua trees (*Cleistoyucca arborescens*), standing like ghosts in a haunted land. It is little wonder that the Mormons, coming upon the trees for the first time, regarded them as a symbol from the Divine Father to guide the little band of weary wanderers into the Promised Land. Forests of Joshuas range across the Mohave desert and extend eastward into southern Utah. Disagreeable as the juicy flower buds smell, they are sweet and nutritious when roasted. Indians, who know so well how to live off the desert, gather the seeds and grind them into a meal which they eat either raw or cooked.

In the crooked, thorny mesquite trees

(*Prosopis juliflora*) nature has provided a nutritious food, a pleasant drink, honey from the blossoms, fuel and even medicine. For centuries before the advent of the white man Indians harvested the ripe, sweet beans of the mesquite, which constituted one of their most important foods. The seed pods were stored in large baskets and ground into meal as needed. Analysis of the dried mesquite beans shows that they contain over twenty-five percent of food elements, mostly sugar. Screwbean (*Prosopis pubescens*), another species of mesquite, has a unique seedpod that looks like a large screw. It is from this feature that it derives the name "screwbean." The seeds of this tree are equally as sweet and nourishing as those of the honey-mesquite.

Rough-leaved chia or sage (*Salvia columbariae*) is one of the most common plants on some of our dry hillsides and sandy washes. That the nourishing properties of chia seed have been known for centuries is indicated by the quantities of seed found in ancient Indian graves. It is too bad chia is not better known in these hard times as a small handful of the seeds will sustain a man at hard work for many hours. The nutty flavored seeds are eaten just as they come from the shrub or are roasted and ground into meal from which a mush is made. Raw chia seed soaked in water produces an aromatic, mucilaginous drink that is very nutritious.

Small seeds of the thistle sage—sometimes called chia also—are ground and boiled into a mush. When added to water, the seeds make a refreshing drink.

The green seed pods of all varieties of the Palo Verde tree (*Cercidium torreyanum*) are used as food. The young seeds are shelled and cooked like green peas, which they resemble in taste. Half ripe seeds make a delectable salad, or they can be baked in the oven. Sometimes the Indians ground the seeds into a meal from which they prepared a porridge.

Probably the rarest and least known food plant of the Southwest is the parasitic Ammobroma (*Ammobroma sonoral*). Papago Indians have used this plant as food for many centuries, calling it sand hill root. The plant is full of moisture and both whites and Indians alike find it, in times of stress, a valuable substitute for water. Before being cooked, the stems resemble the radish in flavor and texture, but are sweeter and more juicy. When roasted on hot coals, they taste somewhat like sweet potatoes. Besides eating

it raw or roasted, the Indians sometimes mix the dried stems with mesquite beans forming a pinole.

Even out on the sun scorched desert one need not forego luscious pies, for, growing on sandy desert mesas as well as on dry plains and washes is the wild rhubarb. The red leafstalks are acid, tender and juicy and make excellent pies.

A delicious tea is made from the slender leafless branches of *Ephedra* by steeping them in boiling water. *Ephedra*, one of Nature's oldest herbal plants, is known by the various names of Desert tea, Squaw tea, Life tea, Brigham Young's weed, American tea and Yerba Vida. The Indians found this humble little plant a wise gift from the Great Father.

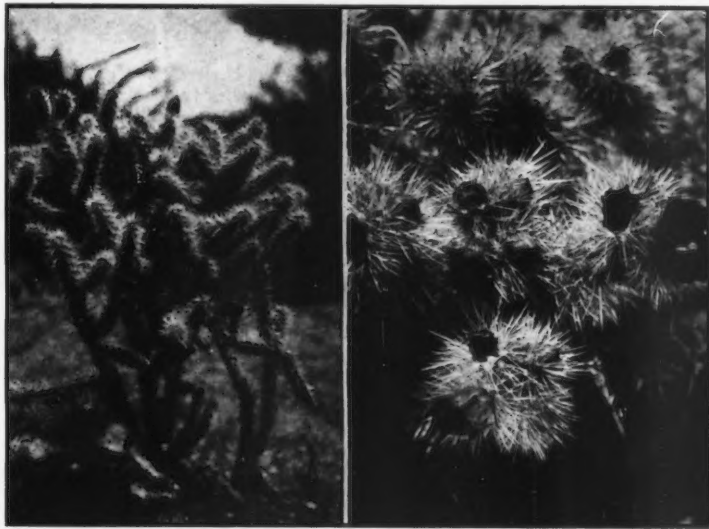
Desert thorns (*Lycium andersonii*) produce red berries which look much like minute tomatoes. Indians found these tiny tomatoes,

either raw or cooked, a pleasing addition to their diet.

Succulent, round leaves of Indian lettuce (*Montia perfoliata*) constitute another wholesome food. The crisp leaves make an attractive salad when mixed with French dressing, or they can be boiled and eaten as greens. This little plant has been taken to England where it is now cultivated and used more extensively as a food than in its native land.

Common on dry mountain slopes, deserts and mesas are the various members of the mustard family. The seeds of Tansy mustard (*Sisymbrium pinnatum*) are ground into meal and cooked as mush, while the leaves and stems of *S. crassifolius* are boiled like cabbage, which it resembles somewhat in taste.

A knowledge of the few desert food plants described will help one following the trails over mesa and canyon to see a greater beauty and value in the weird but characteristic desert plant world.



Opuntia echinocarpa in Dead Man's Gulch, Los Angeles County, a desert canyon of the San Gabriel Mountains. This is a typical open branched plant in which desert birds often build their nests.

Flowers and buds of *Opuntia echinocarpa* on a plant near 29 Palms, California. Buds are reddish, but the open flowers are lemon yellow inside.

California Cacti

XVI OPUNTIA ECHINOCARPA

By E. M. BAXTER

Commonest of the Echinocarpae Series, a nearly California Series, is *Opuntia echinocarpa*. Widespread over Southern California,

it has several distinct forms that have given rise to many common names. "Silver Cholla" is its designation in the Antelope Valley areas

and as far west as the silver spined form exists. "Golden Cholla" is the name given to a yellow spined—really white and yellow sheaths on the brownish spined form. In the higher elevations plants grow more open and are there called "Staghorn Cactus" from the resemblance to the spikes of a deer's horns. In its eastern range this species and *Opuntia acanthocarpa* are called "Cane Cactus" because the woody stems are used to manufacture canes and other articles. An open lattice work effect is found in the skeleton stems of the cylindropuntias. Besides having an unusual appearance, the wood takes a beautiful polish.

Flowers are generally greenish yellow, although a red midrib sometimes is prominent enough to give a reddish tinge to the flowers. These are clustered at the end of branches in groups of four, five, six and more. The ovary is small, densely spiny, and green when matured. Fruits do not mature very freely in nature, most of them withering and soon dropping from the plant. The many spines on the fruit distinguish this species from all out of State opuntias except its fellow member of this Series, *Opuntia acanthocarpa*.

Like most of the chollas (pronounced chò-y-ya) young joints are easily detached and this feature combined with the microscopic backward pointing barbs of their spines make them a formidable article to brush against. Growth of the stems gives a node, or joint, at each year's growth except in certain stems that take on the characters of a trunk and continue growth from year to year. Plants in different sections of their distribution vary in the trunk stem growth feature so that some places may have tall erect plants with long central stems while in other locations the plants are made up of short joints in a low thick bush.

Except along the Colorado River, where it gives over its territory to *Opuntia acanthocarpa*, and in the coastal slope where *Opuntia parryi* abounds, this species occupies all of Southern California's desert and desert foothill area. Stretching for at least two hundred miles from east to west and from Kern and Inyo Counties to the Mexican border, it occupies a great area. An unusual, isolated patch of several acres is found next to the County Forest Patrol Station at Acton. Several other such groups are found in western extensions of its range.

Varying degrees of spininess are met with, but the species may be distinguished by its



Plant and animal skeletons. The open-work stalks are the woody stems of *Opuntia echinocarpa*. The desert tortoise has been caught upside down against a rock and only its shell and tail bones remain to tell the tragic story. The plant stems are used for canes, baskets, small furniture, etc., by novelty artificers. This picture was taken near Daggett, California.

tubercles which are always less than twice as long as wide, often rounded. This same character will be found on slender and thick stemmed plants, and on plants with reddish, yellow, and silver colored spine sheaths. Different combinations of these characters and the previously mentioned one of length of stems have led to the naming of some varieties of the species, but as far as California is concerned I do not credit any of them with being sufficient to validate such action. The red colored sheaths are found in the far eastern distribution in high altitudes near the Nevada line, and give those plants a very distinct appearance. These colors are not constant when brought together in cultivation.

GRAFTED PLANTS

Neomammillaria bullardiana, a new beauty, \$1.50, *Neom. painteri* crests \$1.25, *Neom. wildii* crests \$1.25, *Wilcoxia poseelgeri* 75c, *W. senilis* \$1.00, *W. striata* \$1.25, *W. australis* \$1.50. Post paid.

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PRESIDENT'S COLUMN

By CHARLES GIBBS ADAMS, *President*

The Cactus and Succulent Society of America is proud of its new Secretary, Mr. Harold Weston, the busy engineer. And the Executive Board is pleased with its choice of an efficient and energetic official who showed the good sportmanship to undertake his duties in the very last quarter of the year.

Your President has tried to gather the facts of Mr. Weston's life for this little Column; but a sun-scorched cactus of the desert might as well try to learn the secrets of a violet in the dell.

It is well-known, however, that the new Secretary and his wife,—a pair who look more like an enthusiastic young brother and sister than a settled married couple—have been vigorous workers for the Society, always.

Sometime ago, when the Secretary was far afield, and correspondence needed speeding up, this pair put their shoulders to the wheel and brought the records to date. And now, in the single month of Mr. Weston's Secretaryship, the records are more up-to-the-minute than they have been for years.

Such is the service that leads on organization to success.

Your President likes to fill his column with happy subjects; but, alas, a tragic one so needs constructive thought that it cannot be ignored. That is, the unabated thievery to which the collector is subjected, at least throughout California, where more members live than in any of the other states.

One can hardly regard it as a crime if a discriminating person carefully "swipes" a little cutting off an ordinary and well-bushed succulent where it never will be missed. If it were, your own President, with his much-visited garden would have been worried into his grave before this. In fact, where is the real gardener who has never borrowed one little twig? (This is no invitation to borrow more of mine!)

But that is not the problem. This tragic thieving is centered almost entirely upon the small and very rare specimens on which the collector has spent much money and work. Not less than a dozen such thefts have been reported within the last few months over a very scattered territory.

Evidently the crimes have been committed by persons who know the material, for it is always the precious specimens that vanish. And a strange number of these thefts have

occurred on the meeting nights of the Society.

What is the solution? Shall we get shot-guns, or set out bear traps, or request police guards? Who will send in a solution?

ANNUAL FALL FLOWER SHOW PASADENA AUDITORIUM

Suggesting a verdant cove opening from a rocky canyon, carpeted with rare succulents and with a background of fruiting columnar *Cereus*, the Society Exhibit at the Pasadena Flower Show, arranged by Carl Seebach, was of notable beauty. The attendance at the show was the largest in ten years, and these people ganged up before our exhibit constantly both afternoon and evening. On Friday and Sunday afternoon and evening, Dr. Manning gave repeated talks on the Society and its aims; columnar *Cerei* and the fine examples from Huntington Gardens; American agaves; the geodes from the Geode Beds at Blythe; the occurrence of crests on cacti; the *JOURNAL*, opportune memberships; and the two splendid books published by our Editor, Scott Haselton, "*STAPELIA*," and "*SUCCULENT BOOK*," which were there on sale.

Carl Seelbach wishes to thank contributors and aids who loaned plants and supplied cartage and hours of work. Mr. Wm. Hertrich, Superintendent of Huntington Gardens, who sent large cuttings of fruited branches of columnar *Cerei* from South America, also a carton of the ripe fuchsia-colored *Cereus* fruit; Mr. J. C. Anderson, Carl Pfadenhauer, J. E. Beahm, Dr. Jacolyn Manning, Elizabeth Pingree, Kenneth Scott, Francis Wheeler, and our President, Charles Gibbs Adams. Mr. Seelbach brought many of the choice cacti from his garden at Hawthorne.

Among the notable gardeners and garden authorities who came and lingered studying this exhibit was noted: Ernest Braunton, Dean of Cactaceans in Los Angeles County; Dr. Robert Poindexter, Long Beach; Eric Walther, Golden Gate Park, speaker at the October meeting of the Society at the Library Friday night; Col. L. W. Jordan, Belle Air; Col. Alber, Eagle Rock; Gordon McTavish, Sierra Madre; Mrs. Davis, Pomona; Arthur Hughes, Palms; Col. C. S. Farnsworth, Altadena; Mrs. Howard Smith of Montebello and her guest Mrs. Harvey, formerly of Honduras; Mrs. D. K. Smith of Pacoima; Mrs. A. E. Kick, Everett, Washington; Robert Foster, Ventura; Mrs. Harriet Hertel, and Dr. Lux of Monrovia.



THE CACTUS BOOK by

A. D. Houghton

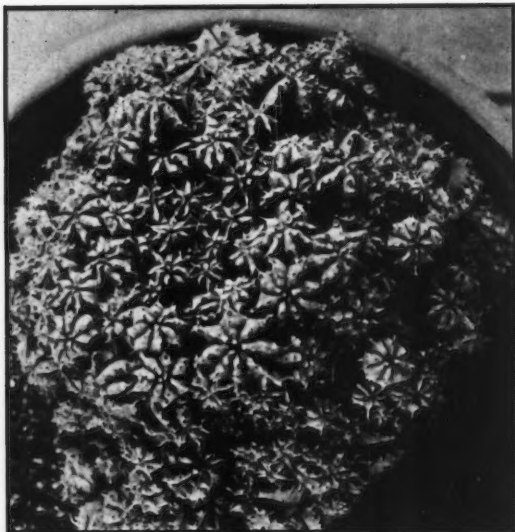
From this book you will learn the secrets of successful watering, how to grow Cacti from seeds, how to propagate the rare species by grafting, how to hybridize, how to grow indoors in pots, and on window sills, how to purchase and trade to get new sorts and what kinds to grow for different effects. Also introduces you to more than 1,000 different kinds of Cacti with information for selecting the types you need for every purpose and location.

Price \$2.25 Postpaid

Cactus & Succulent Society
of America

New Garden Species, IV

By DR. R. W. POINDEXTER



EUPHORBIA MELOFORMIS VAR. PROLIFERA—Hort.

A.C.S. No.5-112-006

ORIGINATOR: G. A. Frick, Los Angeles

DESCRIPTION by G. A. Frick

Characteristics identical with those of *E. meloformis* Ait., except as noted below:

This plant came from seed imported from South Africa. My attention was attracted to the seedling because of its ability to throw off shoots even while in the seedling age.

The year following its purchase it produced 160 branches which were all cut off and rooted, because at that time *Euphorbia meloformis* was considered one of the rarest of all Euphorbias in the United States. The third year I removed 312 cuttings from this same plant. Last year my supply of this species was so great that I decided to allow the plant full swing in its proliferous spree, with the result you see here in the photograph, which shows the second and third layer of branches. I put my boy at counting the nubbins, but he tired of the job when he reached 850.

Propagation by cuttings, I find, assures constancy in reproduction and even remains so in subsequent generations. This habit assures this strain, but most important it

assures a supply to the collectors of America, for news has just reached me that the governments of South Africa have recently placed an embargo on the exportation of any *Euphorbia meloformis* plants.

At no time since I have had the original plant has it ever flowered, although it has passed through five flowering seasons during which the regular *Euphorbia meloformis* flowered every year. This characteristic usually remains in the plants made from this parent. They produce peduncles annually as in the typical *E. meloformis*, yet these peduncles nearly always prove abortive in so far as flowers are concerned, instead, little plants form on the ends of the pedicel where the flower should occur. Only one exception has been noted: a plant produced from a branch and growing some miles distant in an open situation under full sun was recently observed to produce a few flowers (pistillate) although the majority of its peduncles produced plantlets only.

This lessened ability to produce seed means little to successive reproduction as this variety will undoubtedly always remain a cultivated plant.

QUESTION COLUMN

What is the standing of the species commonly known as *Opuntia microcentra*? This does not appear to be recognized by Britton & Rose, unless described later than their Vol. 1, but it apparently resembles closely the *B. & R. species*, *O. macrocalyx*, and it occurs to me the name may be a synonym for *O. macrocalyx*. Or it may be a variety of *O. microdasys*, from which it seems to differ mainly in shorter and finer spicules and a different shade of coloring of the stem—tending to yellow rather than green; also the joints are thinner, just as the joints of *O. rufida* are thicker.

On vegetative characteristics (I have not seen the flower) *O. microcentra*, or at least the specimens I have which was presented to me under that name, is very evidently of the *Basilares* group. E. C. K. Los Angeles.

The name you ask about, *Opuntia microcentra*, I do not find in any literature. You are, of course, familiar with the name *Opuntia macrocentra* which is a common Texas species.

The plant that you describe is probably the same one that I have had variously as *Opuntia lubrica*, *Opuntia microdasys greenispina*, etc., etc. The specimens I have received have been a small-areoled form of *Opuntia macrocalyx*.

This name is probably an example of the carelessness of dealers in giving a name to plants sent out—just to have a name on them. So often they corrupt some common name and apply it to something that they guess is that species.

In all such cases as this I try to find the source or authority for the name given, from the one who used it. Most times you can have the name abandoned if it is improper by suggesting the proper name for it.

I will try to see your plant to identify it.

E. M. Baxter.

LOST PLANTS

Kindly report to the Editor if the following plants are discovered in any collection or offered for sale: *Oroya peruviana*, *Malacocarpus scopia*, *Parodia filcarensis*, *Matucana haynei* and a grafted plant of same, *Neomammillaria microhelia* x *microhiliopsis*, *Rebutia minuscule* and four other *Rebutias*. These were small plants under import and approx. 4in. size. *Ferocactus fordii* and *Neo-*

plumosa, and cuttings of Porto Rican plants. Scott Haselton, 6162 N. Figueroa St., Los Angeles, Calif.

FRICKS NOTES

A member reports that he is achieving promising results with experiments in raising seedlings from seeds that have been given an alcohol spree. He is grateful to the writer for the tip which he claims he got from my article on "Drunken Seeds" on page 261, Volume IV.

So prolific is the *Hylocereanae* in the Hawaiian Islands that they have become almost as common as weeds.

Studies indicating that desert soils lose one half their precipitation income through run-off and evaporation have been made by Dr. Forrest Shreve of the Desert Laboratory located at Tucson, Arizona. All of which is good information to remember when watering cacti growing in either a pot or the garden.

Every winter we receive many letters telling of the loss of many fine plants by a cold spell or too much water. No section of the country seems to be immune, even the favored states of California, Texas, and Florida report many losses each year. But at last we have experienced one natural calamity that the cactus collector has passed through without the loss of a single plant. The draught of this summer has meant nothing to the cactus lover, or they are keeping mighty quiet about it. Cactus and succulents are so constituted that they can stand a very long dry spell before they show the slightest indication of drying out.

How nocturnal cactus flowers are pollinized is explained by the fact that they are always white and are among the most fragrant of any flowers in the vegetable kingdom. The sweet odor is wafted a long way and serves to attract nocturnal insects. These seem to be the agents, at least in part, by which pollination is accomplished, but it is known that bees "butt in" also for they visit the flowers during the hour or two between dawn and the final closing of the petals.

Experiments with the growth of seedlings has shown that some hybrid *Cerei* grow at a faster rate than true species.

*Neomammillaria fragilis**Neomammillaria elongata*

Mammillaria or *Neomammillaria*

By CARL SEELBACH

The sub-tribe No. 6, CORYPHANTHAE, of tribe No. 3, CEREAE, has always been in a state of confusion; in Continental botanical works the entire group is treated as one genus *Mammillaria*.

The sub-tribe CORYPHANTHAE is principally based on flowers coming from areoles other than the spine-bearing areoles.

Drs. Britton and Rose, in their monograph, "The Cactaceae," of which the last volume was published in the late part of 1923, divided this large group of plants into fourteen genera.

The sub-tribe CORYPHANTHAE contains the following genera: *Ancistrocactus*, *Thelocactus*, *Neolloydia*, *Mamillopsis*, *Cochemia*, *Coryphantha*, *Neobesseya*, *Escobaria*, *Bartschella*, *Pelecypora*, *Phellosperma*, *Solisia*,

Dolichothele and *Neomammillaria*.

In 1809, Stackhouse used the name *Mammillaria* in connection with a genus of Algae. In 1812, Haworth used the same name in connection with cacti. Botanical rules give the first correct usage of a name prior right. So. Drs. Britton and Rose erected the genus *Neomammillaria* to take care of one of their newly created genera; all of which are very distinctive in their divisions.

At the last International Botanical Congress, Stackhouse's "*Mammillaria*" was declared invalid; and it gave to Haworth's "*Mammillaria*" full generic rank; but in the meantime Drs. Britton and Rose had divided up the large genus *Mammillaria*, and if we are to follow their classification, we are bound to use the name *Neomammillaria* in connec-

*Neomammillaria tenampensis**Neomammillaria collinsii*

Illustrations from The Cactaceae, Courtesy Carnegie Institution

tion with plants that come under that classification.

Neomammillarias do not have grooved tubercles, and have small flowers, and mostly small clavate (club-shaped), red, naked fruits.

Coryphanthas have grooved tubercles (but not all plants with grooved tubercles are Coryphanthas); large flowers; large, mostly green or yellow, naked fruits.

In some cases it is possible to identify a species by the plant; in others it is necessary to have the flowers, and in other cases it will be necessary to have a fruit.

ECHINOCEREUS SUBINERMIS OR E. LUTEUS

Mr. William Hertrich.

At the time I had the pleasure of visiting

with you and Dr. Werdermann last fall, we discussed the possibility of the *Echinocereus subinermis* and the *E. luteus* being one and the same plant. Britton and Rose apparently distinguish them through the number of ribs, the former having five to seven and the latter nine, (If I recall B. & R. correctly).

Recently one of my plants was bruised on the growing tip and to prevent rot from setting in I cut this growing tip off. New growth has the nine ribs credited to the *E. luteus* while the parent plant has but seven. Possibly this clears up the identity of the two plants and I would greatly appreciate your passing this bit of information on to Dr. Werdermann as I am sure he will be glad to get it.

J. W. Manson.

FROM PACIFIC COAST RECORD

Always alive to the desirable, Frank Miratti, Jr. has just completed and officially opened one of the finest cactus gardens in Western America—at his Beacon Tavern in Barstow, California.

Five hundred varieties, many of them brought from distant lands, Africa, Switzerland, Germany, South America and Mexico have been introduced to this garden by "Cactus PETE" whose real name is Peter Vinkemulder, who created a terraced rock garden effect at the east end of the white-walled hotel. In order to lend color to the garden he placed in it rocks from all parts of the country, including volcanic ash formation, tourmaline, red jasper, gold quartz, beautiful marbles, agate, and is now going to add one from the ballast rocks of the "U. S. S. Constitution" and an egg shaped cobble stone, originally from the streets of Revere, Mass. This is being sent him by Commander Louis J. Gulliver of the U. S. Navy, who declared the cactus garden really marvelous.

In the center of the garden has been placed a quaint wishing well, this having been brought to the establishment by Aemelio Saenz, from Chihuahua, Mexico.



Euphorbia ramipressa

By DR. LEON CROIZAT

Alwin Berger describes and illustrates *Euphorbia alcornis* Baker (Sukk, Euph. 41-42, fig. 10, 1907) as the type of a *Euphorbia* wholly unrelated to J. G. Baker's species.

Baker's announcement ("Further contributions to the flora of Madagascar." Journ. Linn. Soc. 22:517 30 June 1887) in its English version reads as follows:

"*E. (sect. Arthrothamnus) alcornis*. An erect leafless shrub many times dichotomously forked; main stems terete, 1-6 in. in diam.; penultimate branchlets 2-3 in. long; ultimate shorter, subterete, 1-8 in. in diam. Heads clustered at the tips of the branchlets; bracts ovate, minute. Involucre 1-8 in. in diam., crowned by 7-8 erect small cuneate emarginate fleshy appendages."

"Baron 4875," collected by the Revd. R. Baron at a station in Madagascar, which Baker does not record, is the type of the species. Baron himself in a paper published two years after the announcement ("The flora of Madagascar" Journ. Linn. Soc. 25: 246-294 July 1889) mentions several *Euphorbiae* of succulent habit, not *E. alcornis*.

H. Poisson describes *E. alcornis* Baker (Recherches sur la flore meridionale de Madagascar 54, 1912), illustrating (fig. 5, loc. cit.) the specimen preserved in the herbarium of the Museum of Natural History of Paris. The sheet contains three apparently sterile branchlets under the reference "Baron 4875," which suggests that it is a fragment from Baker's type.

Poisson does not mention Berger's "*E. alcornis*," of which he evidently had no knowledge, but observes that *E. alcornis* Baker is not *E. alcornis* hort. Of Baker's species he says (loc. cit., op. cit.):

"It is not to be excluded that some of its specimens may be thorny, but it is wholly unlike *E. alcornis* hort. It differs from that form in not possessing saw-toothed branches and in lacking medullary fibers and distinct lactiferous vessels. (Adapted translation from original)."

The anatomical differentiating datum that Poisson believes to be important is irrelevant. In tropical plants generally, and in succulent *Euphorbiae* in particular, great and sudden alterations in tissues follow changes of habitat and ambient (see "Modifications anatomiques et physiologiques provoquées dans certaines plantes tropicales par le changement du milieu" of D. Bois and J. Gallaud, Comp. Rend. Séan. Acad. Sc., 141: 1033-1034 Paris 1905). Definite and important is the macroscopic difference in the outline of the margins

of the stems and branches.

M. Denis describes *E. alcornis* Baker ("Les Euphorbiées des Iles Australes d'Afrique" Rev. Gén. Bot. 34: 219 1922) as follows:

"*E. alcornis* Baker—Shrub erect, more or less dichotomously branched; branches smooth, terete, leafless; ultimate branchlets slender 2-3 in. long, fleshy. Cyathia unisexual, campanulate in terminal small heads; glands 5 about as long as the cyathium with the aspect of 5 broadly spatulate appendages with subwavy lips revolute. (Italics Denis')."

Vernac. Tsiankoditra (s.) A. Dandouau. Madagascar.—sin. loc. (Baron 4875!), N. O. In. erina (Ampotaka) (Baron). A poorly known species but easily recognized from the characteristic glands to the cyathium. Structure like *E. stenoclada*."

Denis quotes Dandouau in "Catalogue alphabétique des noms malgaches des végétaux" (Bull. Econ. Mad., 10e. an., No. 2, 1910). I have not the reference immediately available, but am inclined to question in principle whether the Sakalava name *Tsiankoditra* specifically and exclusively applies to *E. alcornis* Baker. Poisson (loc. cit., op. cit.) remarks that Geay collected in the calcareous mountains of Fiherenana the specimen of one *Euphorbia* (Geay No. 3366, ex Poisson—an *Herb. Mus. Parisiensis*?) very much like *E. alcornis*. Thanks to M. Raymond Décary, I have received numerous specimens of *Euphorbiae*, mostly unfortunately undeterminable for publications, which show that forms similar to *E. alcornis* Baker are not rare in Northern and Western Madagascar. It is probable that the natives attribute one name to groups of plants of like habit, which taxonomy would consider specifically distinct.

Interesting is the quotation from R. Baron, giving the exact locality of collection of *E. alcornis*, which Denis in his bibliography lists somewhat loosely. The "Compendium des plantes Malgaches" was published in instalments in the "Revue de Madagascar," and should be considered as one of the sources of the botany of the island. In it are contained data that Baker does not seem to have known and Baron would seem to have kept to himself when turning over the specimens for description. *E. alcornis* is mentioned as a "small tree aphyllous, growing in open country, flowering in June," with two localities, Tsiankoditra (North-West Madagascar); Ampotaka (North-West Imerina,

Madagascar) ("Compendium des plantes Malgaches" in "Revue de Madagascar," 8e. année, No. 7:623, July 10th, 1906.)

Like Poisson, Denis ignores Berger's "*E. alcornis*." He notices, however, *E. alcornis* hort., cultivated in the hothouse of the Museum of Natural History of Paris, with the brief comment that that plant is not unlike *E. macroglypha* Lem., a doubtful species (p. 122, op. cit.)

Constantin and Gallaud ("Notes sur quelques Euphorbes nouvelles ou peu connues de la région Sud-Ouest de Madagascar rapportées par M. Geay" Bull. Mus. Hist. Nat. Par. XI:354 1905) give passing attention to *E. alcornis* Baker in a key, placing it next to *E. plagiantha* Drake. Of *E. alcornis* they note as determining characters:

"Terminal branchlets rather slender, becoming woody late. Cymes terminal. Aphyllous."

E. plagiantha is disposed of as follows:

"Cymes lateral."

One year earlier the same authors had described the branchlets of *E. alcornis* as "round, articulate, frequently branching, appearing in whorls" and the fruit as "measuring less than 8 mm. across" ("Nouveau groupe du genre *Euphorbia* habitant Madagascar" in Ann. Sci. Nat., IX ser., Bot., 1:296, 301; 1905).

As a bare quotation from Baker, *E. alcornis* appears in the lists of J. Palacky (Cat. Pl. Madag., II: 13. 1907). Bois and Gallaud do not report it as cultivated at the Colonial Garden of Nogent, where grew *E. intisy* Drake, *E. laro* Drake, *E. leucodendron* Drake (op. cit.). Hochreutiner ("Sertum Madagascariense" Ann. Cons. & Jard. Bot. Genève, XI-XII, 1907-1908) did not receive it. Humbert ("Principaux aspects de la végétation à Madagascar" Mém. Acad. Malg., V 1927) ignores it.

So far as I know, no description of *E. alcornis* Baker was published barring the three ones I have transcribed. Passing mentions that may be made of it in floristic and ecologic accounts are less conclusive, obviously, than taxonomic descriptions from specimens. To my notice the species has never been and is not being cultivated. From the descriptions and the illustration, *E. alcornis* Baker is very closely related to *E. xylophyloides* Brong. ex Lemaire, as that species is understood in cultivation.

The record shows conclusively that Berger in all candor but very much mistakenly assumed *E. alcornis* hort., a plant of unknown

origin which had been long time cultivated, as *E. alcornis* Baker. The error is so evident that it does not require comment. Even if Baker's presentation had been less extended the fact that he attributes the species to sect. *Arthrothamnus* ought, in itself, to have warned Berger against listing any "*E. alcornis*" under sect. *Diacanthium*. I may add that Berger's sect. *Diacanthus* subsect. *Compressae* reunites two species, *E. alcornis* hort., false Baker, and *E. Nyikae* Pax, that have nothing in common beyond the possession of binate spines.

Berger's "*E. alcornis*" can not remain under the name it has assumed in Sukkulente Euphorbien. I am not aware that it has been presented under a correct name and propose it as:

Euphorbia ramipressa nom. nov.—Syn.: *E. alcornis* hort., false Baker, Sukk. Euphorbien 41-42, fig. 10; *E. alcornis* hort. ex Denis and Poisson, op. cit.; *E. alcornis* auct. quoad species non certe Bakeriana et Madagascariensis.

The name is suggested by the flat joints that the species exhibits.

It does not seem safe at present to risk a guess as to the geographic origin of *E. ramipressa*. It comes fairly close in habit to *E. grandidens* Haw., a southern African species, and commends itself as an *Euphorbia* from tropical continental Africa. Seeds of it are being sold in the trade. It seems probable that in this, as in other cases, the species is endemic at some point to be ascertained, but is believed, *fide* Berger, to grow as an importation from Madagascar. The species from Madagascar that resemble somewhat *E. ramipressa* belong to sect. *Arthrothamnus* and *Tirucalli* sensu Boissier, not to sect. *Diacanthium* Boiss.

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